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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,483	11/09/2001	James Leroy Snell	125.003USR1	7202

21967 7590 06/09/2004

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EXAMINER

LIU, SHUWANG

ART UNIT PAPER NUMBER

2634

DATE MAILED: 06/09/2004

25

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/005,483

**Applicant(s)**

SNELL ET AL.

**Examiner**

Shuwang Liu

**Art Unit**

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-1333 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 30-35 and 91-95 is/are allowed.  
6) ☒ Claim(s) 1-29, 36-90 and 96-133 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 09 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see paper #24, filed 03/05/04, with respect to the rejection(s) of claims 123-133 under 35 U.S.C. 251 and claims 1-29, 36-90 and 96-133 under 35 U.S.C. 112, first paragraph have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. The rejections regarding claims 17-29, 44-61, 78-90, and 123-126 under 35 U.S.C. 112, second paragraph have been withdrawn because of the amendments. The rejections regarding claims 36, 41, 43, 44, 53-55, 61, 97, 102, 104, 105, 114-116 and 122 under 35 U.S.C. 102(e) have been withdrawn. However, upon further consideration, a new ground(s) of rejection (35 U.S.C. 103) is made in view of Sloane (US 4,813,001). The rejections regarding claims 1-29, 36-90 and 96-122 under 35 U.S.C. 112, second paragraph as recited in item (1) of the previous office action are remained because it is unclear what the "reducing an average DC signal component" is refers to in the both of claims and response.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-29, 36-90, and 96-126 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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It is unclear what "reducing an average DC signal component" as recited in claims refers to. The DC signal component is refers to be contained in the input signal (information) received from the radio circuit, in the modified Walsh code or in the output of the demodulator. It is also unclear what signal the reducing is relative to.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 36, 41, 43, 44, 53-55, 61, 97, 102, 104, 105, 114-116, 122 and 123 are rejected under 35 U.S.C. 103(a) as being anticipated over Honkasalo et al. (US 6,567,389 B1) in view of Sloane (US 4,813,001).

(1) regarding claims 36, 97 and 123:

As shown in figures 11-13, Honkasalo et al. discloses modulator for a spread spectrum radio transceiver, said modulator comprising:

modulator means (figures 12A and 13) for spread spectrum phase shift keying (PSK) modulating information for transmission, said modulator means comprising at least one predetermined orthogonal code function encoder ( 60 and 62) for encoding information according to a predetermined orthogonal code (modified Walsh codes with

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an offset (deleted one bit)) (column 8, line 26-column 9, line 42). Note: If a set of code sequence is generated by the Walsh functions of order  $M$ , it is inherent where  $M=2^N$ ,  $N$  is a positive integer as recited in claim 123.

(2) regarding claim 55 and 116:

A method for baseband processor for spread spectrum radio communication, the method comprising the steps of:

spread spectrum phase shift keying (PSK) modulating information (figures 12 A and 13) for transmission while encoding the information according to the predetermined orthogonal code (modified Walsh codes with an offset (deleted one bit)) (column 8, line 26-column 9, line 42); and

spread spectrum PSK demodulating (figure 12B) received information by decoding the received information according to the predetermined orthogonal code.

Honkasalo et al. discloses all of the subject matter as described above except for specifically teaching the modified Wash code having an offset of the original Walsh code for reducing the DC component as claimed.

Sloane, in the same field of endeavor, teaches that using the modified Walsh code having an offset of the original Walsh code can reduce the DC component.

It would be desirable to have method to reduce DC component in order to have a high data rate and bandwidth efficient in the communication system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have offset of Wash code as taught by Sloane in the modified Wash code of Honkasalo et al.

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in order to reduce DC component. In doing so, the receiver demodulates spread spectrum signal with high data rate and bandwidth efficient.

Honkasalo et al. further discloses :

(3) regarding claims 41 and 102:

wherein said at least one predetermined orthogonal code function correlator comprises inherently: a predetermined orthogonal code function generator (figure 13) column 8, lines 41-50); and

a plurality of parallel connected correlators ( $62_1$ ,  $62_2$  ...) connected to said predetermined orthogonal code function generator (Walsh Function 1 ...).

(4) regarding claims 43 and 104:

wherein the predetermined orthogonal code is a bi-orthogonal code (Walsh code is bi-orthogonal code).

(5) regarding claims 44 and 105:

A demodulator for a spread spectrum radio transceiver, said demodulator comprising:

demodulator means (12B) for spread spectrum phase shift keying (PSK) demodulating information received, said demodulator means comprising at least one predetermined orthogonal code function correlator (67 and 69) for decoding information according to a predetermined orthogonal code for naturally reducing an average DC signal component (column 8, line 26-column 9, line 42).

(6) regarding claims 54 and 115:

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wherein said at least one predetermined orthogonal code function correlator comprises:

a predetermined orthogonal code function generator (67); and

a plurality of parallel connected correlators connected (69) to said predetermined orthogonal code function generator.

(7) regarding claims 53 and 104:

wherein the predetermined orthogonal code is a bi-orthogonal code.

(8) regarding claims 61 and 122:

wherein the predetermined orthogonal code is a bi-orthogonal code (Walsh code is bi-orthogonal code).

### ***Allowable Subject Matter***

6. Claims 30-35 and 91-95 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach a baseband processor comprises a demodulator, which is configured to demodulate data packets by demodulating the header at the third format and for switching to the respective one of the first and second formats of the variable data after the header, a first carrier tracking loop for the third format, and a second carrier tracking loop for the first and second formats.

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**Conclusion**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is (703) 308-9556.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (703) 305-4714.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

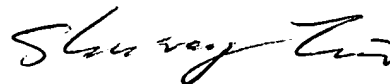
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9306 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Shuwang Liu  
Primary Examiner  
Art Unit 2634

June 7, 2004